Hamilton County, Indiana

2016 ISS Annual Report

and 2017 Technology Plan

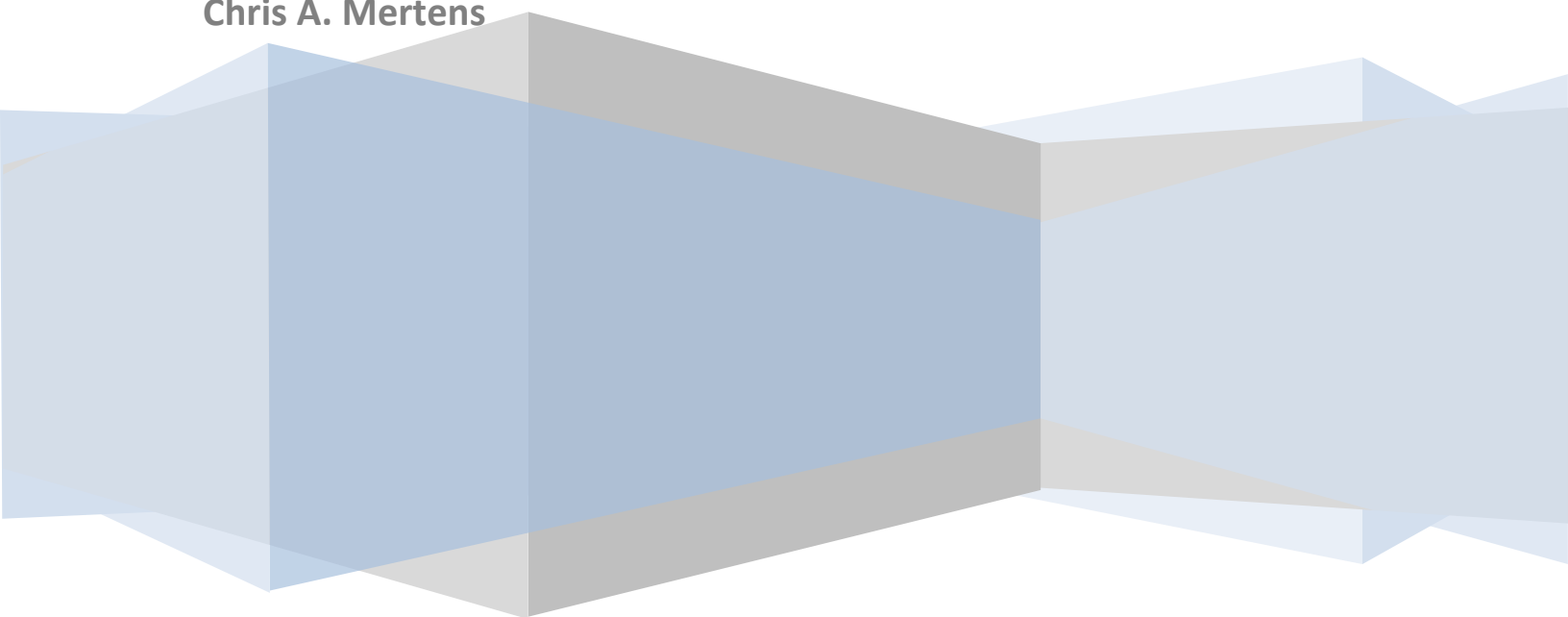Chris A. Mertens

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2016 Annual Report

Executive Summary

Note from the Director of Information Technology

It was a great year for Hamilton County ISS and we continue to be a leader in local government IT operations, not only in the State of Indiana but also throughout the Country. In 2015, Hamilton County was recognized as one of the Best of the Web Counties. In 2016, Hamilton County ISS worked hard to implement projects and systems while also working to ensure costs were controlled and efficiencies were gained.

In 2016, we continued the counties exploration into the Cloud by adding three servers to that improve our ability to access email, video conferencing and SharePoint in the event of a disaster. We also utilized the Cloud to implement Mobile Device Management (MDM). This is a huge security benefit for the county and we became one of the first counties in Indiana to fully implement such a model. The move nearly three years ago to move to Office 365 continues to pay dividends as we have had no downtime as it relates to email, SharePoint or Video Conferencing.

In 2016, Hamilton County ISS continued to maintain and make the necessary changes to the infrastructure that supports the county operations. The biggest change was a complete refresh, including some new fiber, at the Sheriff's Office complex. This means in the last two years we have refreshed and standardized our entire network! Doing this improves our reliability as well as made our entire environment easier to support. Continuing a change from 2015, we continued to migrate from VMware to Hyper-V. This continues to go well and is a costs savings for us each year.

2017 will bring a number of projects for ISS including a large refresh our backup environment including the potential for use of the Cloud for long term storage. We are also looking at rolling out Windows 10 and Office 2016 to the entire user base of Hamilton County. Windows 10 is a much more secure operating system and I feel like it is very important to complete this project and do what we can to protect us from viruses/malware and hacking. There will also be many software projects and upgrades that will improve the efficiency of our business users.

As in the past, it is my goal that Hamilton County ISS will be an example not only in Indiana but throughout the Country for its effective, efficient and innovative use of technology in local government.

2016 Annual Report

2016 was another great year for ISS. The projects completed this past year are described in the 2016 Accomplishments section.

In 2016, ISS finalized the foundation that I have talked about in the past. Our network infrastructure is now completely upgraded both at the downtown buildings and the corrections complex. This really enables us to build upon the speed and reliability to provide the business users everything they need to be effective and efficient. This great foundation has again enabled over 99.9% uptime for County systems. This is a testament to the work staff has done over the 7 years I have been the ISS Director.

2016 was also a great year for me professionally; I again served as President of the Indiana Government Technology Leaders Association. I also spoke at a couple of conferences discussing what we have done here in Hamilton County. Both the ISS Staff and I are looking forward to 2016 and the exciting things happening here in Hamilton County.

2017 Technology Plan

2017 will be a year where the focus will be on cyber security. I feel like we have done a very good job ensuring the county data is safe and secure but as we've seen locally with Madison County, there cannot be a letdown in our defenses. We will also continue to build and improve upon existing applications and systems and upgrade where necessary. As always, I will use 2017 to look for efficiencies for offices throughout the County.

As I mentioned, ISS will refresh our backup system hardware and look for possibilities of doing long term storage in the Cloud. This will enable us to keep the growing amount of data without adding hardware on premise. Rolling out Windows 10 is also a priority for me and I firmly believe the security advantages are an important part of our cyber security effort. In order for us to be able to complete the Windows 10 rollout, the state must make Odyssey work properly with the newest version of Windows 10.

Other new projects include an upgrade to Outrider, the web based piece of POSSE, that is used extensively throughout the County. This is a significant upgrade that will ultimately lead to a much more flexible environment for POSSE. ISS will also be upgrading servers and continue the move from VMware to Hyper-V which will reduce maintenance expense as well as increase efficiency.

ISS is looking forward to another challenging and fulfilling year, and the business successes that will result from the planned technology initiatives.

Motto, Mission, Vision

Motto: Working toward the betterment of Hamilton County through the use of technology.

Mission: To ensure that County data and voice services are secure, accurate, available and recoverable in order to enable County departments to better serve the County's citizens in the most cost effective and efficient manner possible.

Vision: Hamilton County ISS is striving to become a model for local government technology implementation; both in how technology is used, and in how technology service is delivered.

Scope of ISS Support

Hamilton County ISS provides technology support for all county departments

Applications

- Provide application support and maintenance for application systems and several mission critical applications: Budget, Finance, Payroll, Tax Assessment/Collections, Permitting and Inspections, etc.
- Propose new software and technology solutions based on departmental requests or County needs to promote efficiency and productivity
- Evaluate each Department's technology service requests for technical feasibility and impact on County resources
- Evaluate system benefits to be gained such as staff productivity and efficiency, lower operating costs, and/or anticipated increases in services to the public
- Facilitate software procurement from determining feasibility, evaluation for business and technical fit, security assessment, training, through implementation
- Design, develop, and implement application systems, queries, and reports
- Evaluate and implement E-Gov applications
- End to end database administration, including security management, configuration management, performance tuning, and future planning
- Provide technical approval for acquisition of third party applications software

GIS

- Administer core GIS systems including installation and configuration, all data, software and architecture
- Provide departmental GIS development and support
- Design, develop and support GIS PC and web-based applications
- Develop more advanced methods of dispensing GIS data to the public and other local, state and federal agencies
- Provide GIS application training to end users and the general public
- Facilitate future GIS planning and establishment of procedures

Telecommunications

- Ensure the County's voice and telecommunications needs are effectively met
- Provide support and maintenance for all the County's phones; includes support for the Cisco Call Manager/Unity phone system and our fax from desktop capabilities
- Provide management oversight of telephone/cell phone company vendors
- Manage the design and support of call menu systems and distribution groups
- Cell phone and air card procurement and management

Operations

- Act as custodian of all data residing in the County's server systems; ensure timely backup (on and off-site) and real-time replication to the Disaster Recovery site
- Provide technical approval for the acquisition of all IT related hardware, desktop, and operating system software and contractual services
- Maintain the central data processing facility and all operational computerized systems
- Ensure that County computer resources are effectively managed
- Provide helpdesk staff to initiate and track services calls for new requests and trouble reports
- Maintain inventory of all the County technology assets
- Ensure technology users are in compliance with all standards, security policies and procedures
- Disposal of surplus equipment

PC & Peripherals

- Provide technical support, including installation, troubleshooting, repair, and replacement, for desktop PC's, laptops, and printers
- Evaluate hardware/software, product lines, and alternate solutions to meet Hamilton County's ever increasing technological requirements

Data Networks and Storage

- Enable and administer network connectivity to support multiple user access to network based applications and systems
- Enable and administer Internet access, with security safeguards, for all County users
- Implement necessary departmental security procedures consistent with the security policies established by the County
- Provide security measures to maintain data integrity, and protect data from loss, misuse, and unauthorized access
- Optimize storage of data through efficient implementation of both centralized SAN and server systems
- Support of the Windows servers throughout the County's data network

- Optimize the use of the Clouds for both Systems and Storage

Technology Refresh

- Determine life expectancy of Hamilton County technology assets
- Project replacement schedule of technology assets, in alignment with functional purposes and budgetary constraints
- Evaluate refresh assignment, determine replacement specifications, quote replacement equipment and services

- Procure and install replacement technology equipment

IT Staffing

2016 was a good year for ISS from a staffing standpoint. We filled a couple of vacant position that we open due to a variety of circumstances. Those vacant positions included one in the public safety area as well as one in the GIS area. At this time, ISS has no vacancies! In reviewing our organization and comparing to others around the country, I believe we need at least one additional staff person with the possibility of a 2nd. The first individual I think we need is someone in the Senior System Administrator or Network Administrator role. We have seen nearly 100% growth in the number of servers since I've been here. The other area is in the SharePoint and development area. Just three years ago, we had two SharePoint sites and now we have nearly 40, we also have a need not only in our web area for development talents but also in GIS and in our Applications area. These new positions will be something I discuss the ISS Board, Commissioners, and Council throughout 2017.

Hamilton County ISS – Organization Chart (January, 2017)
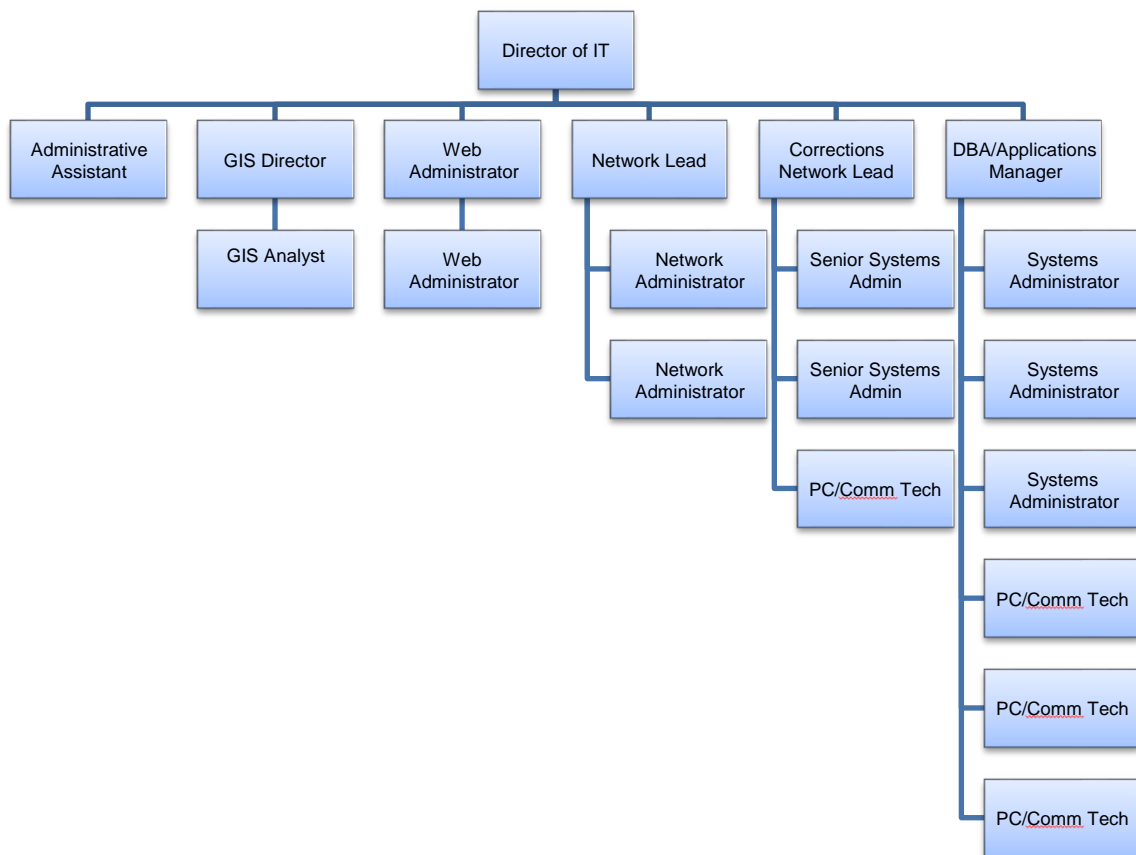
2016 Accomplishments

Microsoft Intune – ISS implemented Mobile Device Management with Microsoft Intune. With this product, we have required people who access email and Office 365 resources with their mobile phone to enroll and be managed by Intune. This provides a level of security we simply couldn't in the past.

PrinterLogic – This software replaces our print servers and simplifies how users connect to and print here at work. This solution also provides us the ability to provide detailed reports for each printer. Uptime for printing is greatly enhanced with this product.

Direct Access – Direct Access is a free VPN option that Microsoft includes in their servers. ISS tested and started rolling out Direct Access in areas other than Public Safety. This will allow us to reduce our NetMotion license costs moving forward.

VMware to Hyper-V migration – ISS has continued to migrate from VMware to Hyper-V. This continues to provide not only cost savings but also enhances our disaster recovery ability.

E-Filing and Remote Document Storage for Courts – ISS worked closely with Court Admin to roll out E-Filing and Remote Document Storage. This involved a lot of changes in technology at the desktop throughout the court offices.

Wi-Fi Upgrades (Sheriff's Office) – A new wireless controller was installed at the Sheriff's Office to provide enhanced wireless on the public safety campus. A 2nd controller was also installed at the Judicial Center to provide redundancy. This upgrade will allow for continued roll-out of upgraded wireless to the rest of the Hamilton County offices in 2017 and beyond.

Servers in the Microsoft Cloud – In 2016 we created three servers in the Microsoft Azure Cloud. Those servers allow for us to have access to our Office 365 environment regardless of whether our server room is available or not.   In the event of a disaster, our users will have access to email, calendaring, SharePoint, and video conferencing with Skype for Business.

Windows and Office Updates – In 2016 ISS took the step to apply all critical and security updates for Windows and Office software. In addition, ISS now regularly applies all critical and security updates. This provides a much more secure computing environment.

Security Mentor – ISS implemented end user cyber security awareness training from Security Mentor. This provides each user in the county with a monthly training course.

Web Updates – The ISS web group made major updates including posting new Tax Statements and Comparison reports, Election Results data, and completely new Property Record Cards.

ADA Compliancy – ISS completed phase 3 for ADA compliancy and mobile functionality for our custom web applications.

SharePoint – SharePoint continued to expand in 2016. The biggest expansion occurred in HR, ISS, EMA, and the Health Department. SharePoint has been configured with workflow features for forms submissions, and calendaring features.

Patrol Car Laptops – ISS rolled out new GeTac laptops to the patrol cars. These new laptops are running Windows 10 and are lighter, responsive, and secure than the laptops they are replacing.

Kronos Telestaff – ISS implemented Kronos Telestaff scheduling module for Patrol, Communications, Jail, and Community Corrections staff. Additional capability will be added on moving into 2016.

Posse/Oracle – The ISS Applications group upgraded Posse to version 7 and Oracle to version 11g. Posse is used throughout the County for work order management and workflow capabilities.

Teller – The Teller project that allows for over the counter payments was started in 2016 and will continue to expand in 2017.
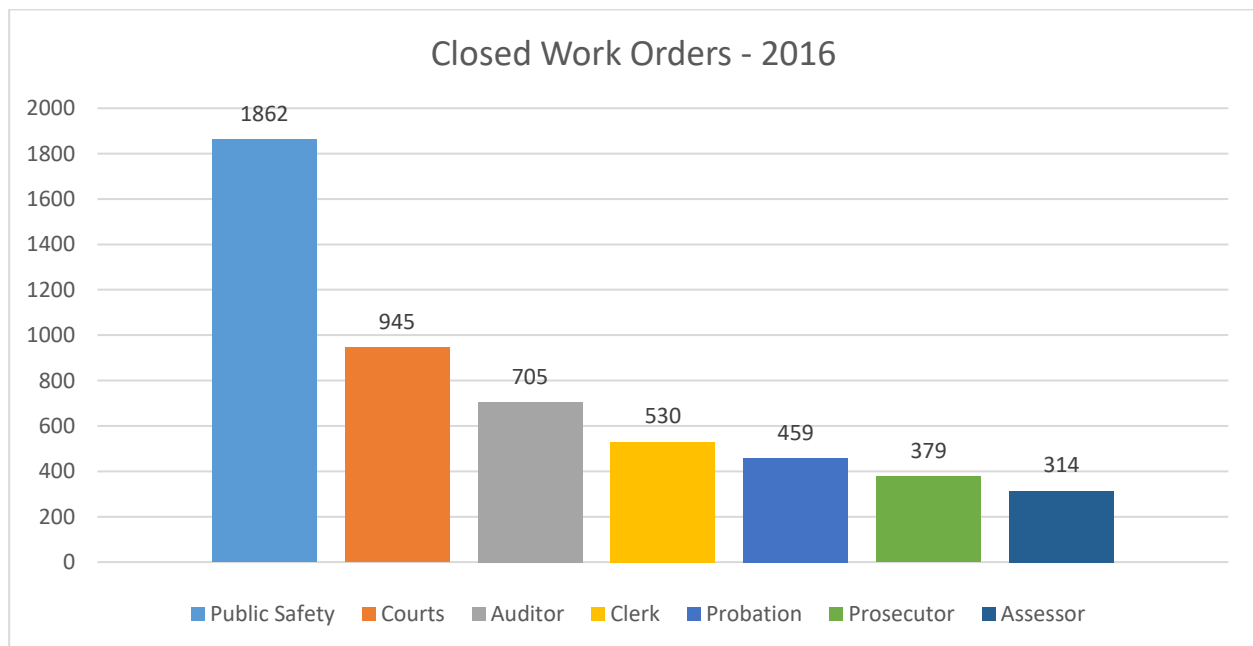
PCs/Laptops – Deployed nearly 100 Laptops and PCs throughout the County.

Election – The ISS Helpdesk provided onsite support to the early voting sites.

Performance Measures

As mentioned in past reports, the helpdesk software utilized by ISS helps us direct our work and give us a look at what issues may be a trend throughout the County. In 2016, ISS Staff closed nearly 8000 tickets that were sent to our helpdesk. Each ticket is documented with a solution so solving similar problems moving into the future becomes quicker and more efficient.

One of the reports we find useful and shows where our work is coming from is one that shows Work Orders by Department.   Below is a sample of the top 7 departments in terms of work orders for 2015: (Public Safety includes: Communications, Community Corrections, Juvenile Probation, and the Sheriff's Office)

Closed Work Orders - 2016

Department	Closed Work Orders
Public Safety	1862
Courts	945
Auditor	705
Clerk	530
Probation	459
Prosecutor	379
Assessor	314

Other examples of reports available include:
- Work Orders by Technician
- Work Orders Logged to Particular Computers
- Work Orders Logged to Particular Users
- Overdue Work Orders

ISS can also connect to the data in Track-IT to generate custom reports, looking for specific information or trends within the data.

ISS also tracked "Un-scheduled Downtime" in 2016. This was reported to the ISS Board at each meeting and is an attempt to make sure the ISS Board holds me accountable and that staff feel accountable as well. A summary of that report is:

- Un-scheduled downtime occurred in 6 months of 2016
- At no time did any of the downtime affect the entire county
- There were no instances of any network downtime

2017 Technology Plan

IT Staffing

In 2016, ISS was able to fill the vacant positions we had. One of those positions was a GIS Analyst. That opening was created by the promotion of Joe Seig in late 2015. The other position was a Senior System Administrator. That position was created by the departure of Steve Dirks, who moved to Arizona and the subsequent promotion of Scott Ligler in early 2016. Both of those positions were filled by quality individuals who have been working out great for ISS and the County.

As I mentioned earlier, I believe that there is a need to consider at least one new position and maybe two for the ISS Department. As I've mentioned, we operate today with less staff than what we did when I arrived. We have been able to do this by standardizing and simplifying systems. However, with the growth we've seen in the number of servers in addition to the growth of the SharePoint environment and development needs, I think the time has come to add individuals.

2017 Goals, Objectives

The items ISS will look to complete in 2016 are:

- Windows 10 Roll-Out

- Office 2016 Roll-Out

- Backup hardware refresh

- Disaster Recovery re-design

- Moving more systems to Azure

- Completion of New World Upgrade

- Completion of Dual Factor Authentication to meet CJIS requirements

- Upgrade of the Cisco phone system

- Expansion of Online Payments

- Continue to enhance applications for better ADA compliancy

- Investigate the use of the Cloud for long term backup of data

- Complete the migration from VMware to Hyper-V

- Remove all legacy storage from the environment

- Implement and test a true Disaster Recovery Plan

- Upgrading Posse from Client/Server app to browser based app

- Expanding Teller project for Treasurer and Community Corrections

- Replace Personal Property System for Assessor

- Begin search for Eden financial system replacement

In addition to these stated objectives, ISS will continue to look for ways to be more effective and efficient and to make the systems supporting Hamilton County more reliable and cost effective.

Technology Trends and Impacts

Cloud Computing – Cloud Computing remains one of the biggest trends in the field of Information Technology. Many are saying any new project should be evaluated with a "Cloud First" mentality. This simply means that instead of building onsite infrastructure, should or could this be done in the cloud first? I think that Cloud Computing isn't something we can ignore and moving forward this will be integral to the success of Hamilton County. I will continue to evaluate all new projects that come along with an eye toward the cloud.

In 2017, Hamilton County will continue to look closely at taking further advantage of the cloud for things like test and development servers as well as long term storage. From an availability perspective, there are real advantages to having infrastructure and security handled and maintained by an organization like Microsoft or Amazon.

Cyber Security – Cyber Security is a topic that is on the mind of everyone right now, especially with the recent happening in Madison County. Cyber Security will be one of the primary focuses of ISS in 2017 and it must be to maintain the safety and security of our users and data. In 2015 we had a 3rd party take part in an external penetration test, in 2016 we implemented a monthly cyber security training program. In 2017, we will continue expand our cyber security training to try and ensure our employees are one of our best defense. In the final month of 2016, we started a trial of some security software from Microsoft that does in depth scanning of all email sent or received and does "zero day" testing for malware and viruses. The software will also test any hyperlinks for safety in emails prior to allowing our employees visit those sites.

Security threats are constantly changing so it will continue to be important for ISS to continue to investigate products that will protect us from the growing attacks we see on a daily basis.

Big Data – This is a topic that has been a part of the report for a couple of years now and I debated whether or not to keep it on the list. I think it should be something we continue to monitor and the cost of the tools necessary to participate in "Big Data" are much more affordable than in past years. Big data refers to all the data an organization has and how that data can be analyzed to identify trends that can positively impact the business of the County. Big Data continues to be a focus for the State of Indiana and I believe there are data sets they are using from Indiana Counties, including Hamilton County. My positive relationship with the State CIO will keep me informed of the State's Big Data initiatives.

Hamilton County ISS Strategic Plans

The ISS Department was busy in 2016 and accomplished a number of things that fit the mantra that I've been pushing since I arrived, which is to streamline and simplify things in order to make operations more efficient and effective. One of the big things we finished was the network refresh that happened at the Public Safety campus. This completed the vision we started in 2015 of completely redoing the network by standardizing, documenting and generally organizing it so it was easier to support and provided enhanced performance for all County Departments. The network is the foundation of everything related to IT and without a stable and secure network, other systems could not reliably function.

With this foundation in place, ISS will continue work with departments to identify processes that can be streamlined to improve efficiency. This is a key area of where Hamilton County can make gains that will improve services to citizens and make efficient use of limited tax payer dollars.

As I mentioned earlier, Cyber Security will be a focus in 2017. This is vital and will require us to make investments and remain diligent in how we move forward with new and current technology. Effective Cyber Security will not be easy.

Hamilton County will remain in the spotlight in 2017 as we continue to build on what is already recognized as one of top technology counties in the US. ISS will remain active both locally, state wide, and nationally by engaging with peers, attending events, and speaking at conferences and other engagements. It is important for ISS management and staff to continue to grow and introduce best practices into our organization.

Closing

The Hamilton County ISS department is looking forward to 2017! When you look at the goals we have for 2017, they focus on improving systems and improving security. This is a change from past years where we focused on putting standardization and major systems in place that laid the foundation. The foundation is now complete and the focus is about improvement. The environment we have put in place with the support of the Commissioners, Council, and ISS Board provides a robust, secure environment that the County can utilize to support operations and protect County data.

I look forward to the coming year and what it holds. I believe Hamilton County will continue to be recognized as a leader in Indiana as well as throughout the United States.